

CIRCUIT BREAKER REPLACEMENT NM3, NM2B, VA1000, VA2000

REPLACEMENT PROCEDURES

NARKOMED 3:

NOTE: Use proper ESD control during all removal and replacement procedures.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Disable the three circuit breakers located on the side of the primary power supply assembly by pulling out each button with a knife or sharp object.
3. While supporting the battery pack (bottom rear panel on the primary power supply assembly), remove the four screws holding the battery pack to the primary power supply assembly and lower the battery pack to the floor. See Figure 1.
4. Disconnect primary power supply cable P3 from the connector on the battery pack.
5. Remove the bottom cabinet drawer.
6. Remove the five screws securing the top cover of the primary power supply assembly, and remove the cover. See Figure 2.
7. Disconnect the wires from the terminals on the circuit breaker to be replaced. Mark or note the color and position of each wire so that the replacement circuit breaker can be connected in the same manner as the original.
8. Remove the external hex nut from the circuit breaker to be replaced, and remove the circuit breaker.

REPLACEMENT PROCEDURES (continued)

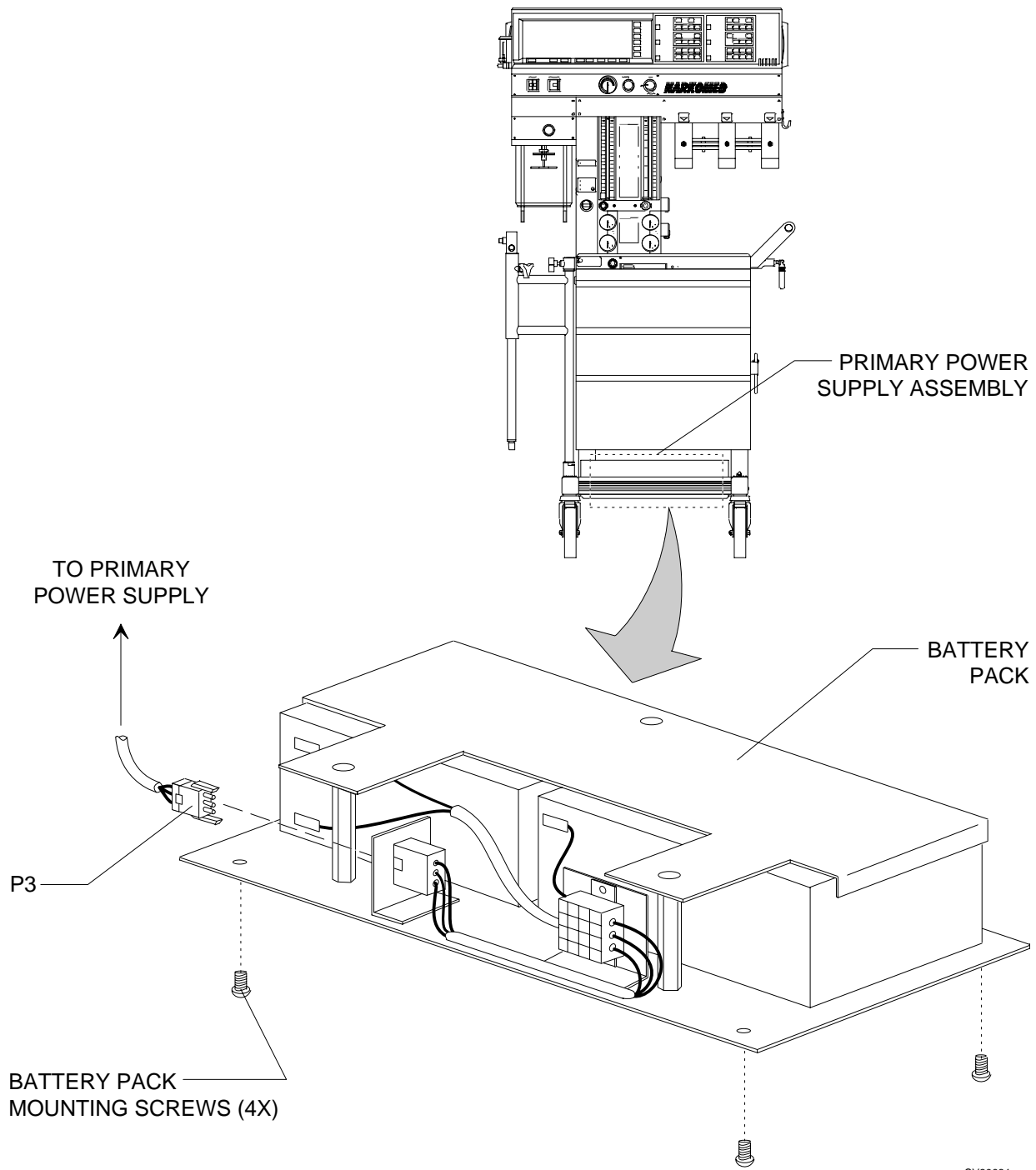


Figure 1: NARKOMED 3 BATTERY PACK

REPLACEMENT PROCEDURES (continued)

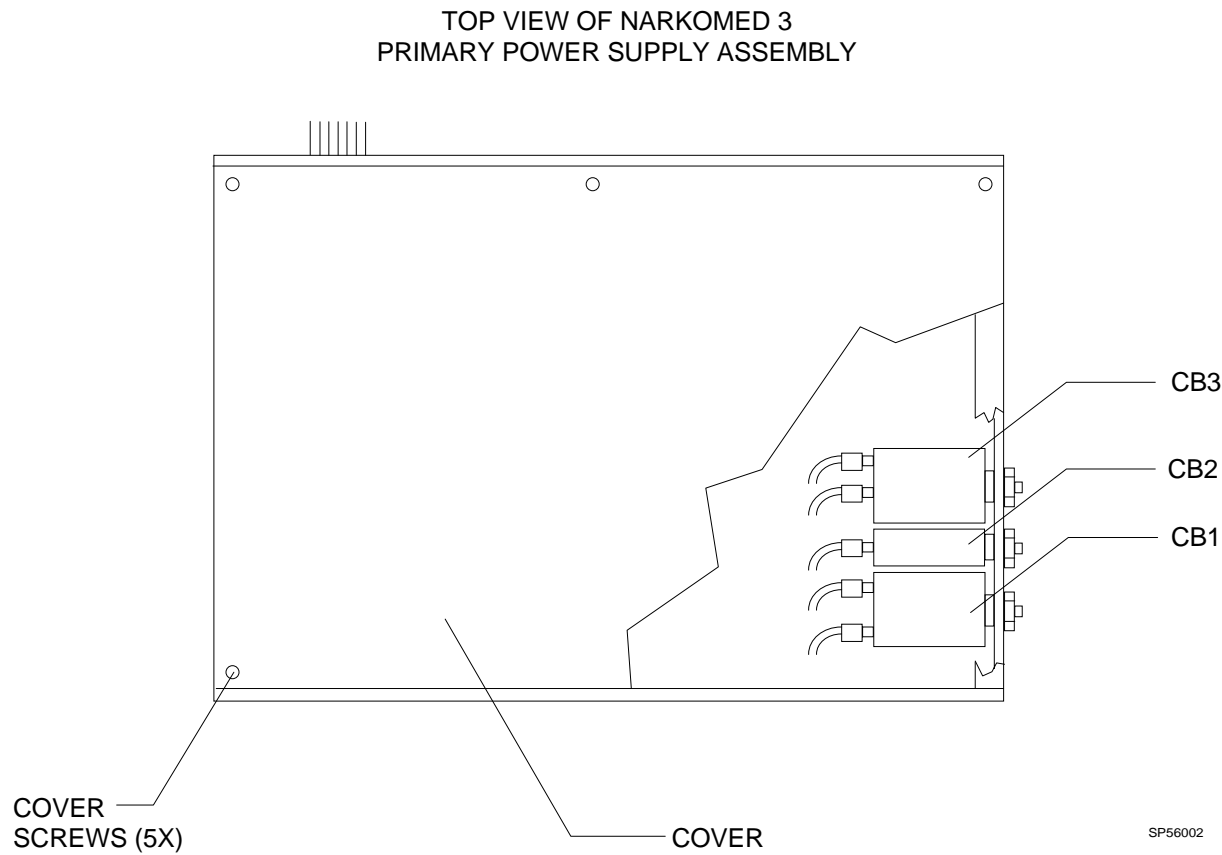


Figure 2: NARKOMED 3 CIRCUIT BREAKER LOCATION

REPLACEMENT PROCEDURES (continued)

- | | |
|---|---|
| <p>9. Install the replacement circuit breaker in the primary power supply assembly with Terminal 1 toward the top.</p> | <p>12. Reinstall the bottom cabinet drawer.</p> |
| <p>10. Connect the wires to the circuit breaker terminals in the same manner as the original. For convenience, Table 1 lists wire identification for each terminal.</p> | <p>13. Join primary power supply cable P3 to the connector on the battery pack.</p> |
| <p>11. Reinstall the primary power supply cover and secure it with the screws that were previously removed.</p> | <p>14. Position the battery pack in the primary power supply housing and secure it with the four screws that were previously removed.</p> |
| | <p>15. Reset the circuit breakers by pressing in each button</p> |
| | <p>16. Perform a complete PMS on the machine.</p> |

Table 1: NARKOMED 3 CIRCUIT BREAKER CONNECTIONS

Circuit Breaker	Terminal	Wire
CB1	1	Blue: Mains Filter FL2
	3	Brown: Mains Filter FL2
	2	Lt Blue: AC Receptacles
	4	Brown: AC Receptacles
CB2	1	Orange: Battery Pack P3-2
	2	Orange: Secondary Power Supply P7-5
CB3	1	Blue: Mains Filter FL1
	3	Brown: Mains Filter FL1
	2	Blue: Primary Power Supply TB1-8
	4	Brown: Primary Power Supply TB1-13

REPLACEMENT PROCEDURES (continued)

NARKOMED 2B:

NOTE: Use proper ESD control during all removal and replacement procedures.

1. Turn the System Power switch to STANDBY and remove AC power from the machine.
2. Disable the three circuit breakers at the back of the monitor box by pulling out each button with a knife or sharp object.
3. Remove the screws holding the monitor box top shelf. Lift the back of the shelf and disconnect its ground wire from the chassis ground tab, then lift out the shelf.
4. On the power supply assembly, disconnect the AC power cable at J1, and disconnect the battery wire harness at J7. See Figure 3.

5. Remove the four cover plate retainer screws, and remove the power supply cover plate.

6. Disconnect the wires from the terminals on the circuit breaker to be replaced. Mark or note the color and position of each wire so that the replacement circuit breaker can be connected in the same manner as the original.

NOTE: CB1 also has an attached wire harness with in-line connectors that join the battery wire harness. See Figure 4.

7. Remove the external hex nut from the circuit breaker to be replaced, and remove the circuit breaker.

REPLACEMENT PROCEDURES (continued)

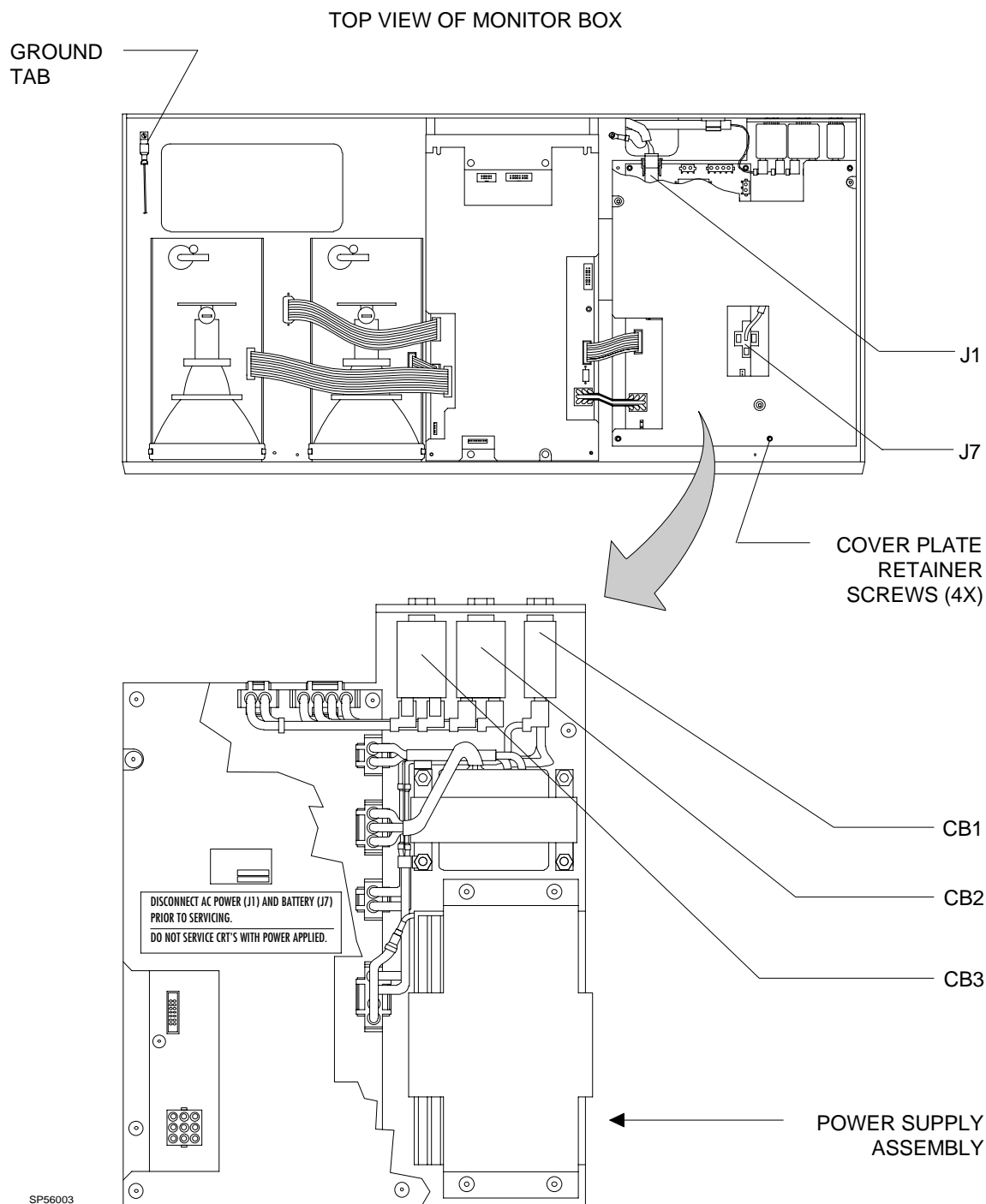


Figure 3: NARKOMED 2B CIRCUIT BREAKER LOCATION

REPLACEMENT PROCEDURES (continued)

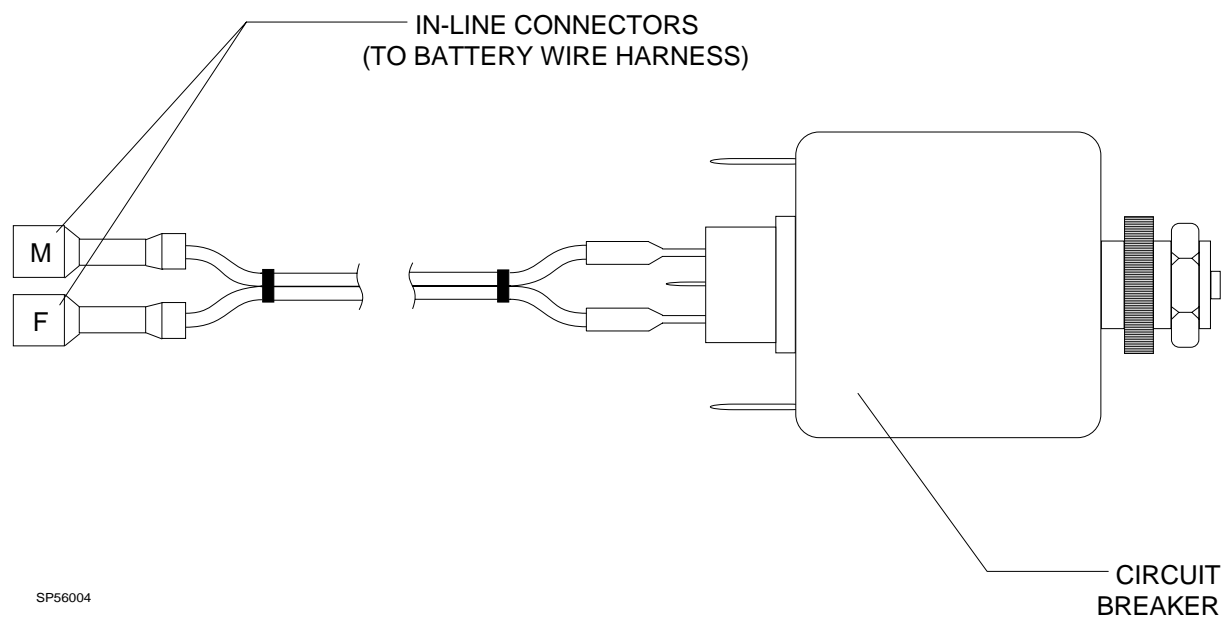


Figure 4: CB1 CIRCUIT BREAKER ASSEMBLY

REPLACEMENT PROCEDURES (continued)

- | | |
|--|--|
| <p>8. Install the replacement circuit breaker in the power supply chassis with Terminal 2 toward the top.</p> <p>9. Connect the wires to the circuit breaker in the same manner as the original. For convenience, Table 2 lists wire identification for each terminal.</p> <p>10. Reinstall the power supply cover and secure it with the screws that were previously removed.</p> | <p>11. Reconnect the AC power cable at J1 and the battery wire harness at J7.</p> <p>12. Place the monitor box top shelf into position, connect its ground wire to the chassis ground tab, and reinstall the top shelf screws.</p> <p>13. Reset the circuit breakers by pressing in each button.</p> <p>14. Perform a complete PMS on the machine.</p> |
|--|--|

Table 2: NARKOMED 2B CIRCUIT BREAKER CONNECTIONS

Circuit Breaker	Terminal	Wire
CB1	1	Yellow: J6, Power Supply PCB Asm
	2	Wh/Yellow: J6, Power Supply PCB Asm
	Wire Harness In-Line Connectors	Black: Battery Wire Harness Black: Battery Wire Harness
CB2	1	Brown: J3, Power Supply PCB Asm
	3	Blue: J3, Power Supply PCB Asm
	2	Wh/Brown: J3, Power Supply PCB Asm
	4	Wh/Blue: J3, Power Supply PCB Asm
CB3	1	Brown: J2, Power Supply PCB Asm
	3	Blue: J2, Power Supply PCB Asm
	2	N.C.
	4	N.C.

REPLACEMENT PROCEDURES (continued)

VITALERT 1000

NOTE: Use proper ESD control during all removal and replacement procedures.

1. Press the STANDBY key on the front panel, and remove AC power from the instrument.
2. Disconnect the AC power cord by pressing in both retaining clips and pulling the cord out.
3. Disable CB1 and CB2 on the rear panel by pulling out each button with a knife or sharp object.
4. Disconnect any data cables from the instrument.
5. If the instrument is equipped with a Capnomed analyzer, disconnect the exhaust line at the rear panel and remove the auxiliary water trap holder at the patient interface panel.
6. Remove all connections from the patient interface panel on the left side of the instrument.

7. Remove the six screws and washers securing the cover to the bottom of the chassis, and remove the six screws at the rear of the cover.

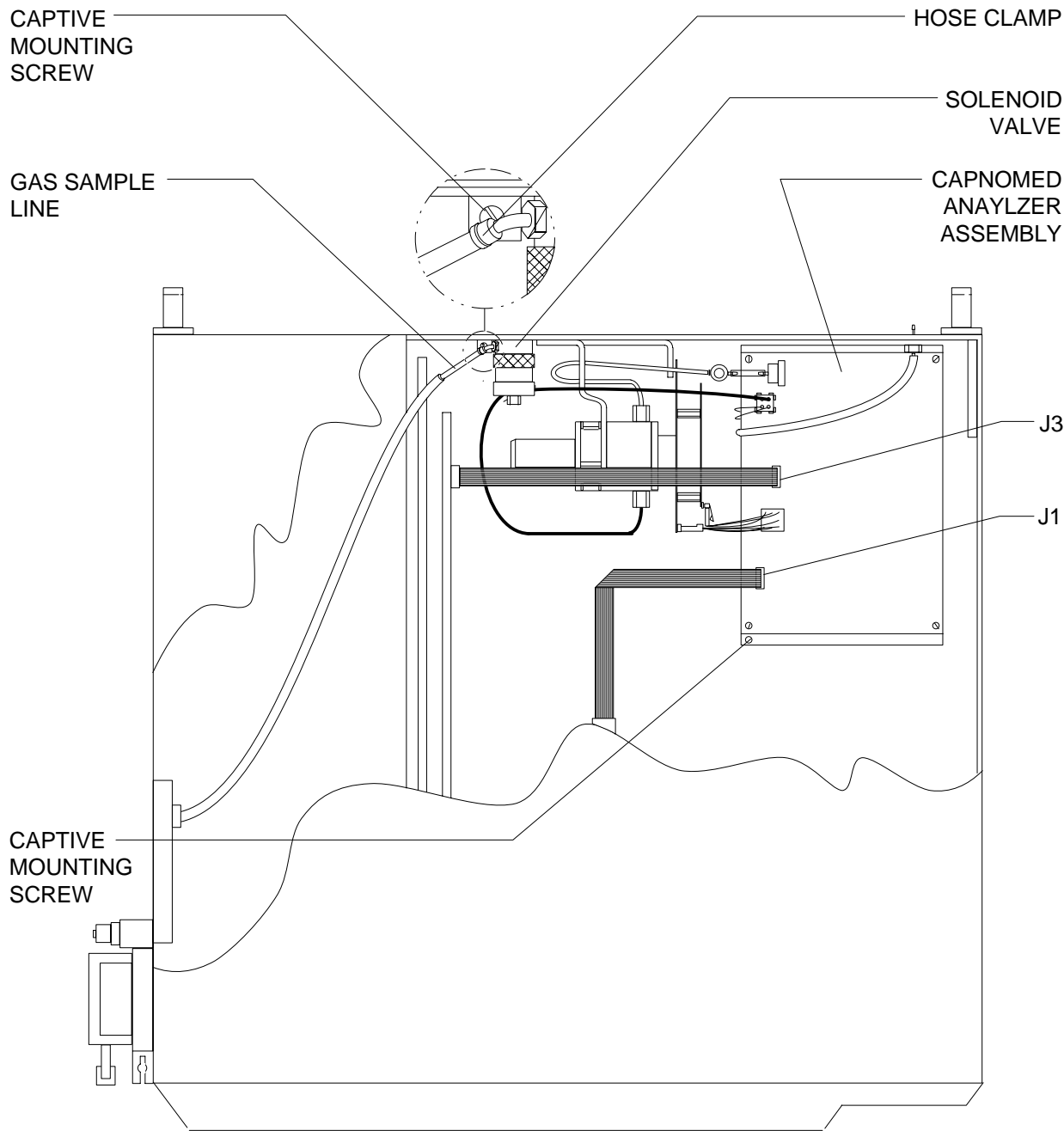
8. Remove the cover by sliding it towards the rear of the chassis.

NOTE: If the instrument does not have a Capnomed analyzer, skip to Step 12.

9. Disconnect the gas sample line from the solenoid valve on the analyzer. Be careful not to damage the hose barb on the solenoid valve. See Figure 5.
10. Disconnect the following cables from the upper PCB assembly on the Capnomed analyzer:

J1 Monitor Cable
J3 Processor Board Cable
11. Loosen the two captive mounting screws securing the Capnomed analyzer, and carefully lift the analyzer assembly from the chassis.

REPLACEMENT PROCEDURES (continued)



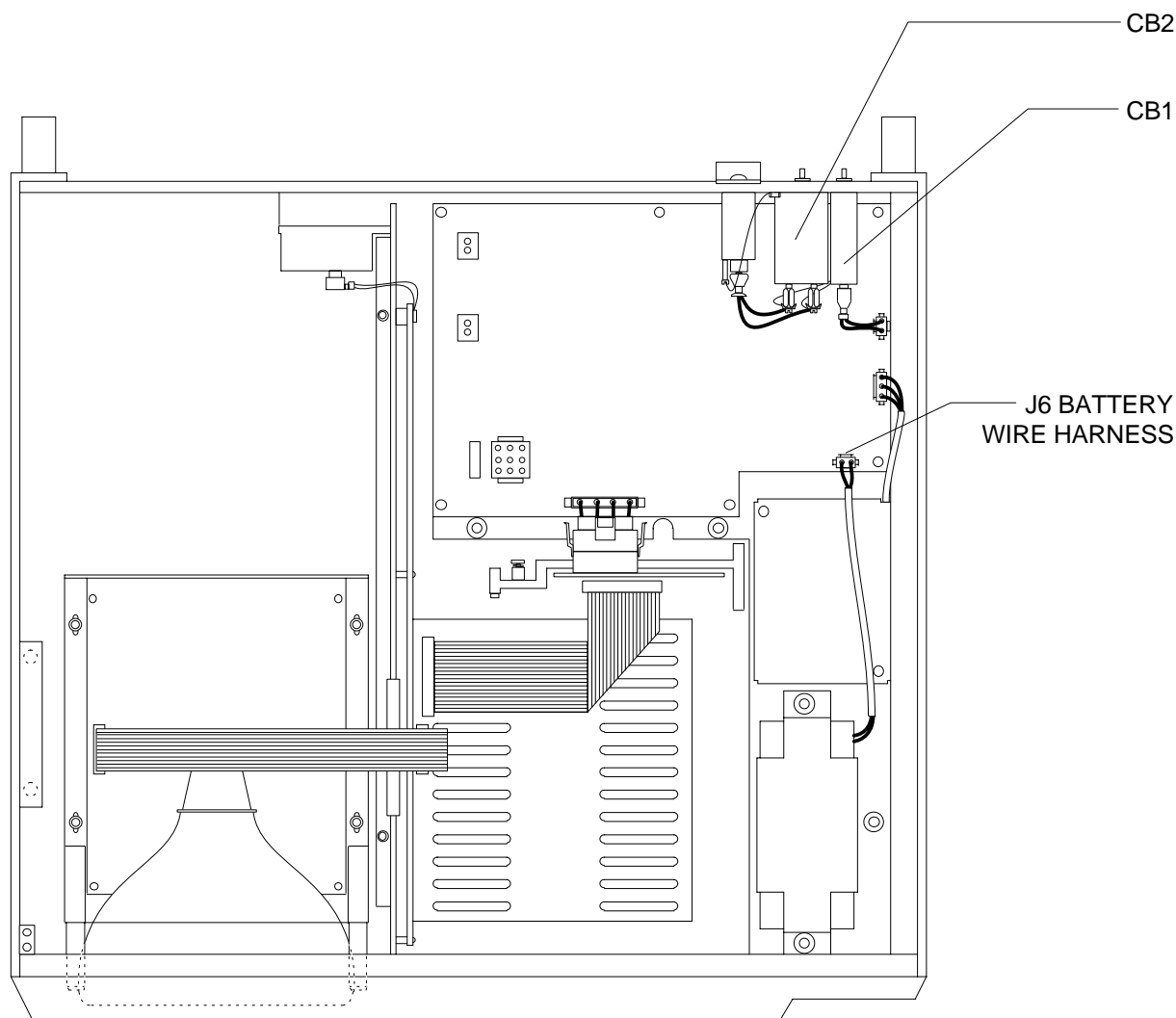
SV81011

TOP VIEW OF VITALERT 1000

Figure 5: CAPNOMED ANALYZER REMOVAL

REPLACEMENT PROCEDURES (continued)

12. Disconnect the battery wire harness from J6 on the power supply PCB assembly. See Figure 6.
 13. Disconnect the wires from the terminals on the circuit breaker to be replaced.
 14. Remove the external hex nut from the circuit breaker to be replaced, and remove the circuit breaker.
- Mark or note the color and position of each wire so that the replacement circuit breaker can be connected in the same manner as the original.



TOP VIEW OF VITALERT 1000 WITH COVER REMOVED
(SHOWN WITHOUT MONITORS)

SP56006

Figure 6: VITALERT 1000 CIRCUIT BREAKER LOCATION

REPLACEMENT PROCEDURES (continued)

- | | |
|--|--|
| <p>15. Install the replacement circuit breaker in the power supply chassis with Terminal 2 toward the top.</p> <p>16. Connect the wires to the circuit breaker in the same manner as the original. For convenience, Table 3 lists wire identification for each terminal.</p> | <p>20. Connect the gas sample line to the solenoid valve. Be sure that the hose clamp is correctly installed.</p> <p>21. Slide the cover onto the chassis and reinstall the six screws at the rear of the cover.</p> <p>22. Reinstall the six screws and washers at the bottom of the cover.</p> |
|--|--|

Table 3: VITALERT 1000 CIRCUIT BREAKER CONNECTIONS

Circuit Breaker	Terminal	Wire
CB1	1	Gray: J1-2, Power Supply PCB Asm
	2	Wh/Gray: J1-1, Power Supply PCB Asm
CB2	1	Wh/Brown: Mains Filter
	3	Wh/Blue: Mains Filter
	2	Brown: Power Transformer
	4	Blue: Power Transformer

- | | |
|---|---|
| <p>17. Reconnect the battery wire harness to J6 on the power supply PCB assembly.</p> <p>NOTE: If the instrument does not have a Capnomed analyzer, skip to Step 21.</p> <p>18. Reinstall the Capnomed analyzer in the chassis and tighten its captive mounting screws.</p> <p>19. Reconnect the cables that were previously removed from J1 and J3 on the Capnomed analyzer.</p> | <p>23. Connect all data cables, and restore all patient interface panel connections.</p> <p>24. If the instrument is equipped with a Capnomed analyzer, reconnect the exhaust line at the rear panel and reinstall the auxiliary water trap holder at the patient interface panel.</p> <p>25. Enable CB1 and CB2 by pressing in each button.</p> <p>26. Perform a complete PMS on the instrument.</p> |
|---|---|

REPLACEMENT PROCEDURES (continued)

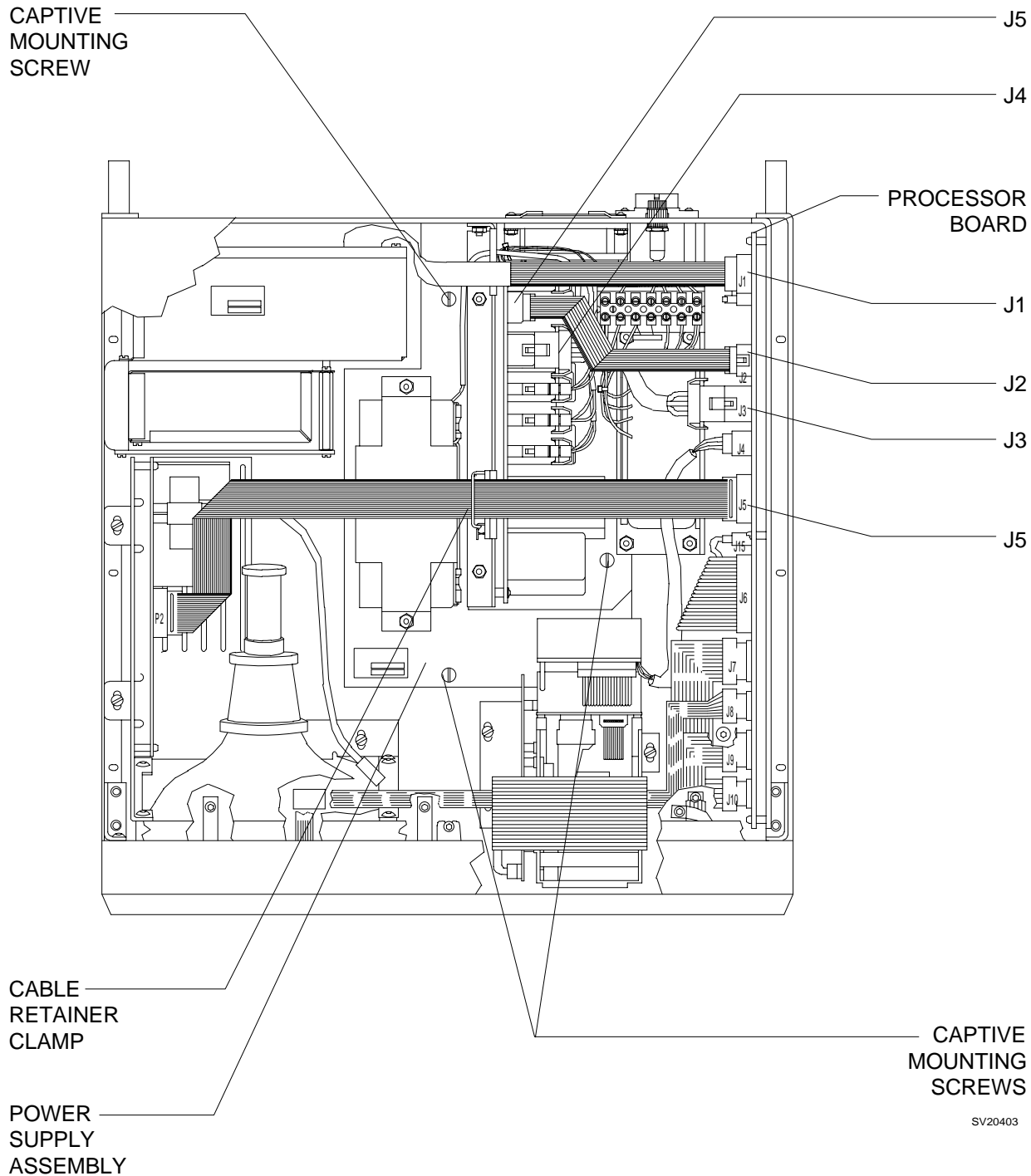
VITALERT 2000

NOTE: Use proper ESD control during all removal and replacement procedures.

1. Press the STANDBY key on the front panel, and remove AC power from the instrument.
2. Disconnect the AC power cord by pressing in both retaining clips and pulling the cord out.
3. Disable CB1 and CB2 on the rear panel by pulling out each button with a knife or sharp object.
4. Disconnect the data cable from the instrument.
5. Disconnect all cables from the patient interface panel on the left side of the instrument.
6. Remove the eight screws holding the cover to the bottom of the chassis.
7. Remove the cover by sliding it towards the rear of the chassis.
8. Disconnect the DAU - processor cable from J1 on the processor board. See Figure 7.
9. Disconnect the power supply ribbon cable from J5 on the power supply PCB assembly, and from J2 on the processor board.
10. Disconnect the power supply wire harness from J4 on the power supply PCB assembly, and from J3 on the processor board.
11. Disconnect the CRT cable from J5 on the processor board, and open its cable retainer clamp on the power supply assembly.
12. Loosen the captive screws securing the power supply assembly, and remove the assembly.

REPLACEMENT PROCEDURES (continued)

TOP VIEW OF VITALERT 2000 WITH COVER REMOVED



SV20403

Figure 7: POWER SUPPLY ASSEMBLY REMOVAL

REPLACEMENT PROCEDURES (continued)

13. Disconnect the battery wire harness from J3 on the power supply PCB assembly. See Figure 8.

NOTE: Steps 14 and 19 may be omitted if power supply assembly is earlier style P/N #4110041.

14. Remove the transformer bracket mounting nuts, and move the transformer away from the circuit breakers to gain access to the circuit breaker terminals.

15. Disconnect the wires from the terminals on the circuit breaker to be replaced. Mark or note the color and position of each wire so that the replacement circuit breaker can be connected in the same manner as the original.

16. Remove the external hex nut from the circuit breaker to be replaced, and remove the circuit breaker.

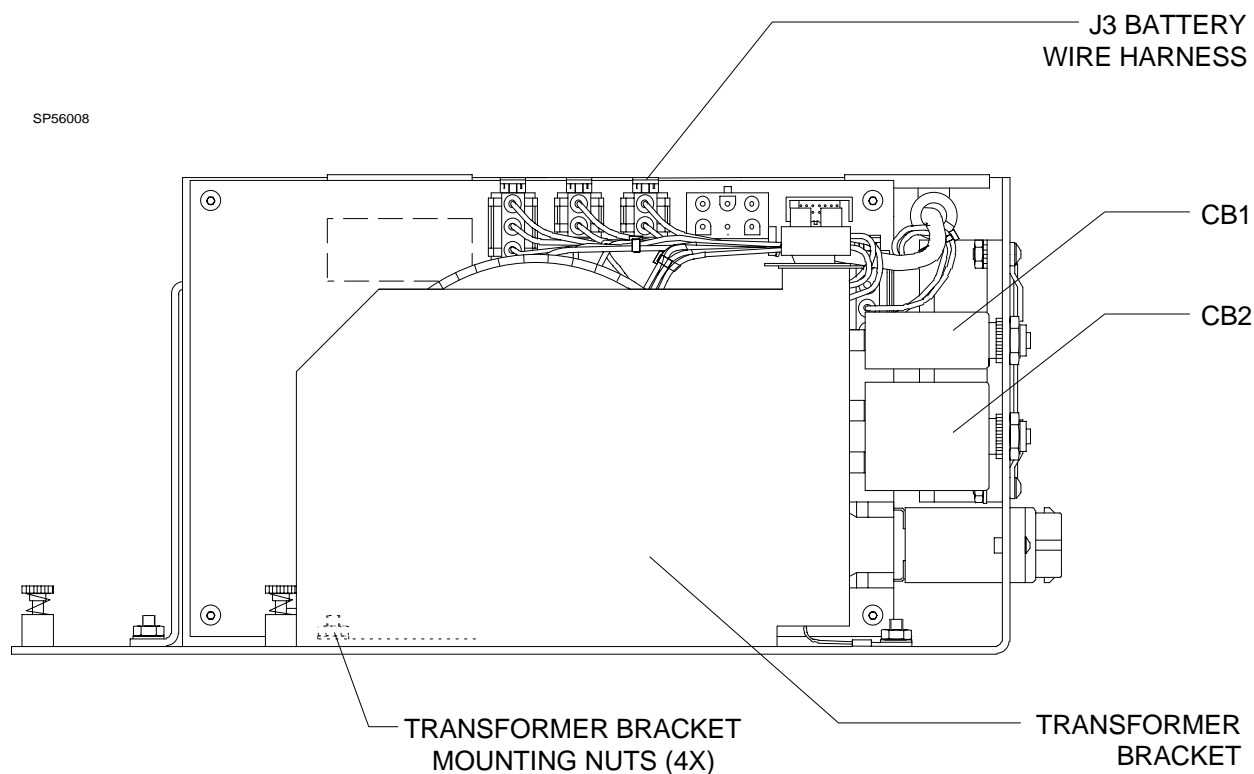


Figure 8: VITALERT 2000 CIRCUIT BREAKER LOCATION

REPLACEMENT PROCEDURES (continued)

- | | |
|--|---|
| <p>17. Install the replacement circuit breaker in the power supply chassis with Terminal 1 toward the outside edge of the chassis.</p> <p>18. Connect the wires to the circuit breaker in the same manner as the original. For convenience, Table 4 lists wire identification for each terminal.</p> | <p>22. Reinstall the ribbon cable from J5 on the power supply PCB assembly to J2 on the processor board.</p> <p>23. Connect the DAU - processor cable to J1 on the processor board.</p> <p>24. Connect the CRT cable to J5 on the processor board, and secure the cable in the retainer clamp on the power supply assembly.</p> |
|--|---|

Table 4: VITALERT 2000 CIRCUIT BREAKER CONNECTIONS

Circuit Breaker	Terminal	Wire
CB1	1	Gray: J2-2, Power Supply PCB Asm
	2	Wh/Gray: J2-1, Power Supply PCB Asm
CB2	1	Brown: Mains Connector
	3	Blue: Mains Connector
	2	Brown: TB1-4
	4	Blue: TB1-2

- | | |
|---|---|
| <p>19. Place the transformer bracket in its correct position and reinstall its four mounting nuts.</p> <p>20. Position the power supply assembly in the chassis, and fasten the captive mounting screws.</p> <p>21. Reinstall the wire harness from J4 on the power supply PCB assembly to J3 on the processor board.</p> | <p>25. Slide the cover onto the chassis and reinstall the eight screws that were previously removed.</p> <p>26. Connect the data cable and all patient interface cables.</p> <p>27. Enable CB1 and CB2 on the rear panel by pressing in each button.</p> <p>28. Perform a complete PMS on the instrument.</p> |
|---|---|

PARTS REQUIRED

NARKOMED 3

PART DESCRIPTION	PART NUMBER
Circuit Breaker, CB1 (AC Receptacles)	4110537-002
Circuit Breaker, CB2 (Battery)	4110923-001
Circuit Breaker, CB3 (AC Machine Power)	4110537-002

NARKOMED 2B

PART DESCRIPTION	PART NUMBER
Circuit Breaker Assembly, CB1 (Battery)	4110919
Circuit Breaker, CB2 (AC Machine Power)	4110537-001
Circuit Breaker, CB3 (AC Receptacles)	4110537-002

VITALERT 1000

PART DESCRIPTION	PART NUMBER
Circuit Breaker, CB1 (Battery)	4110923-002
Circuit Breaker, CB2 (AC Power)	4110537-003

VITALERT 2000

PART DESCRIPTION	PART NUMBER
Circuit Breaker, CB1 (Battery)	4110923-002
* Circuit Breaker, CB2 (AC Power)	4110537-005

* For earlier style (P/N #4110041) power supply assembly, use 4110537-003 for CB2.



NORTH
AMERICAN
DRÄGER

Quality Service for Life®

Technical Service Department
22 Commerce Drive
Telford, Pennsylvania 18969
Telephone: (215) 721-5402
(800) 543-5047
Facsimile: (215) 723-5935

Part Number: SP00056

Rev: -
Date: May 15, 1992
© 1992 N.A.D., Inc.